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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/009,619	05/06/2003	Gerhard Herbig	P/63034-PCT	1418

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489 FIFTH AVENUE  
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EXAMINER
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JACKSON, BLANE J

ART UNIT	PAPER NUMBER
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2685

DATE MAILED: 09/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/009,619	HERBIG, GERHARD	
	<b>Examiner</b>	<b>Art Unit</b>	
	Blane J Jackson	2685	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 06 May 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>06 May 03</u> .   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohtsuka et al. (U.S. Patent 4,910,468) with a view to Mizoguchi (U.S. Patent 5,383,224).

As to claim 1, Ohtsuka teaches a receiver for two orthogonally polarized signals with the same carrier frequency comprising:

a receiving branch is present for each of the two signals,

a demodulator for the received signals to the transmitted signal is provided (figure 3, main signal and cross polarization signal input followed by demodulators (10) and (11) and associated local oscillators),

polarization decouplers for both receiving branches which compensate for cross-polar crosstalk between the two received signals characterized by the fact that polarization decoupling of the two received signals occurs after their demodulation (figure 3, a transversal filter for each signal branch, signaled by the other cross polarization branch response, applies the correction signal to a

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subtracting junction in the receive path of both signal paths to compensate for interference, column 3, line 50 to column 4, line 21).

Ohtsuka teaches that the system operates correctly even when the main signal and cross polarization signal are in an asynchronous condition (Abstract and column 4, lines 17-21) but is silent as to means for synchronization of the phases of the received signals occurs after polarization decoupling.

Mizoguchi teaches a cross polarization interference canceller, similar to Ohtsuka, that generates the reverse characteristic component of the interference component (base band) of the different polarization signal included in the main polarization signal through adaptive control of the tap coefficient of the internal transversal filter and outputs to a digital adder (column 5, lines 15-10) to form a compensated signal for subsequent signal processing in a Signal Processing Circuit. Mizoguchi teaches the Signal Processing Circuit (figure 3, (19) and (20)) processes the compensated signal for differential decoding and error correction (column 5, line 53 to column 6, line 2) and for this specific circuit, monitors the number of generated word sync signals and error pulses which are obtained in error correction decoding for control decisions.

It would have been obvious to one of ordinary skill in the art at the time of the invention to recognize in the asynchronous/ synchronous interference compensation system of Ohtsuka the subsequent signal processing circuit of Mizoguchi for subsequent signal processing including synchronization and error correction decoding as generally required for the application.

As to claims 2 and 3, Mizoguchi teaches the demodulators of both orthogonal signal branches are driven by the same or different reference frequency where the local oscillator is not restricted as to type but understood consistent with current receiver designs (column 4, lines 17-30).

### ***Conclusion***

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Lankl (U.S. Patent 4,757,319) discloses an adaptive depolarization interference compensator where the polarization signals are not necessarily synchronous with the clock frequency and/ or carrier frequency. Iwamatsu et al. (U.S. Patent 4,914,676) discloses a cross polarization interference canceller by detecting the phase difference between a main and interference polarization component of the main polarization with a phase shifter for compensation in the main polarization. Nozue (U.S. Patent 4,992,798) discloses a digital radio transmission system for transmitting independent dual data using cross polarization with a cross polarization interference canceller. Koizumi et al. (U.S. Patent 5,075,697) discloses a dual polarization transmission system where an interference component of the other polarization generated on the basis of the cross-polar IF signal or demodulated signal is removed from the received signal of one polarization.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Blane J Jackson whose telephone number is

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(703) 305-5291. The examiner can normally be reached on Monday through Friday, 8:00 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (703) 305-4385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BJJ

  
EDWARD F. URBAN  
SUPERVISORY PATENT EXAMINER  
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